### E. Q

# **EAST Search History**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	691	726/22.ccls. AND (@pd<"20040414" or @ad<"20040414" or @prad<"20040414" or @rlad<"20040414")	US-PGPUB; USPAT; USOCR; EPO; DERWENT; IBM_TDB	ADJ	ON	2007/10/18 15:39
L2	0	proof of work AND 726/22.ccls. AND (@pd<"20040414" or @ad<"20040414" or @prad<"20040414")	US-PGPUB; USPAT; USOCR; EPO; DERWENT; IBM_TDB	ADJ	ON	2007/10/18 14:14
L3	32	proof AND work AND 726/22.ccls. AND (@pd<"20040414" or @ad<"20040414" or @prad<"20040414")	US-PGPUB; USPAT; USOCR; EPO; DERWENT; IBM_TDB	ADJ	ON	2007/10/18 14:14
L4	4	(DOS OR denial of service) AND network AND proof AND work AND 726/22.ccls. AND (@pd<"20040414" or @prad<"20040414" or @rlad<"20040414")	US-PGPUB; USPAT; USOCR; EPO; DERWENT; IBM_TDB	ADJ	ON	2007/10/18 14:20
L5	4	(DDOS OR DOS OR denial of service) AND network AND proof AND work AND 726/22. ccls. AND (@pd<"20040414" or @ad<"20040414" or @prad<"20040414" or @rlad<"20040414")	US-PGPUB; USPAT; USOCR; EPO; DERWENT; IBM_TDB	ADJ	ON	2007/10/18 14:15
L6	59	threshold AND (DDOS OR DOS OR denial of service) AND network AND 726/22.ccls. AND (@pd<"20040414" or @prad<"20040414" or @prad<"20040414" or @rlad<"20040414")	US-PGPUB; USPAT; USOCR; EPO; DERWENT; IBM_TDB	ADJ	ON	2007/10/18 14:21
L7	5	proof AND threshold AND (DDOS OR DOS OR denial of service) AND network AND 726/22.ccls. AND (@pd<"20040414" or @ad<"20040414" or @prad<"20040414" or @rlad<"20040414")	US-PGPUB; USPAT; USOCR; EPO; DERWENT; IBM_TDB	ADJ	ON	2007/10/18 14:22
L8	30	intrusion AND threshold AND (DDOS OR DOS OR denial of service) AND network AND 726/22.ccls. AND (@pd<"20040414" or @ad<"20040414" or @rlad<"20040414") @prad<"20040414" or @rlad<"20040414")	US-PGPUB; USPAT; USOCR; EPO; DERWENT; IBM_TDB	ADJ	ON	2007/10/18 14:24

10/18/2007 5:35:49 PM

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# **EAST Search History**

L9	30	(work OR process\$3 OR operat\$4 OR calculat\$4 OR crunch\$3) AND intrusion AND threshold AND (DDOS OR DOS OR denial of service) AND network AND 726/22.ccls. AND (@pd<"20040414" or @ad<"20040414" or @prad<"20040414" or @rlad<"20040414")	US-PGPUB; USPAT; USOCR; EPO; DERWENT; IBM_TDB	ADJ	ON	2007/10/18 15:25
L10	0	computational work AND intrusion AND threshold AND (DDOS OR DOS OR denial of service) AND network AND 726/22.ccls. AND (@pd<"20040414" or @prad<"20040414" or @prad<"20040414" or @rlad<"20040414")	US-PGPUB; USPAT; USOCR; EPO; DERWENT; IBM_TDB	ADJ	ON	2007/10/18 15:26
L11	0	(computational WITH work) AND intrusion AND threshold AND (DDOS OR DOS OR denial of service) AND network AND 726/22.ccls. AND (@pd<"20040414" or @ad<"20040414" or @prad<"20040414" or @rlad<"20040414")	US-PGPUB; USPAT; USOCR; EPO; DERWENT; IBM_TDB	ADJ	ON	2007/10/18 15:26
L12	0	(computational NEAR work) AND intrusion AND threshold AND (DDOS OR DOS OR denial of service) AND network AND 726/22.ccls. AND (@pd<"20040414" or @ad<"20040414" or @prad<"20040414" or @rlad<"20040414")	US-PGPUB; USPAT; USOCR; EPO; DERWENT; IBM_TDB	ADJ	ON	2007/10/18 15:26
L13	0	(computational SAME work) AND intrusion AND threshold AND (DDOS OR DOS OR denial of service) AND network AND 726/22.ccls. AND (@pd<"20040414" or @ad<"20040414" or @prad<"20040414" or @rlad<"20040414")	US-PGPUB; USPAT; USOCR; EPO; DERWENT; IBM_TDB	ADJ	ON	2007/10/18 15:26
L16	0	(computational task OR computational work OR computational interrogation OR client puzzle OR computation task OR computation work) AND denial of service AND ("726".clas. OR "713".clas. OR "380". clas.) AND (@pd<"20040414" or @ad<"20040414" or @prad<"20040414" or @prad<"20040414"	US-PGPUB; USPAT; USOCR; EPO; DERWENT; IBM_TDB	ADJ	ON	2007/10/18 15:41
L17	18	(computational task OR computational work OR computational interrogation OR client puzzle OR computation task OR computation work) AND (DDOS OR DOS OR denial of service) AND ("726".clas. OR "713".clas. OR "380".clas.) AND (@pd<"20040414" or @ad<"20040414" or @prad<"20040414")	US-PGPUB; USPAT; USOCR; EPO; DERWENT; IBM_TDB	ADJ	ON	2007/10/18 15:42
L18	4	"6944663".pn. OR "7197639".pn.	US-PGPUB; USPAT; USOCR; EPO; DERWENT; IBM_TDB	ADJ	ON	2007/10/18 17:24

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client puzzles denial of service

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#### **Patents**

Patents 1 - 4 on client puzzles denial of service. (0.37 seconds)

Method and apparatus for using client Sort by relevance | Sort by date (new first) | Sort by date (old first) puzzles to protect against denial-of ...

US Pat. 6944663 - Filed Mar 6, 2002 - Sun Microsystems, Inc.

(54) METHOD AND APPARATUS FOR USING CLIENT PUZZLES TO PROTECT AGAINST DENIAL-OF-**SERVICE** 

ATTACKS (75) Inventors: Christoph L. Schuba, Sandhausen (DE); ...

Method and apparatus for cryptographic protection from denial of service attacks

US Pat. 7139679 - Filed Jun 27, 2002 - Cisco Technology, Inc.

21, 2006 D. Dean et al., "Using Client Puzzles to Protect TLS," 10th Annual ...

Further, denial of service protection is conveniently implemented as a ...

Cryptographic countermeasures against connection depletion attacks

US Pat. 7197639 - Filed Feb 2, 2000 - RSA Security Inc.

The client puzzle protocol also allows for graceful deg- 10 radation in service when an attack is mounted. The size of the puzzles can be increased as the ...

Method and system for protecting a security parameter negotiation server ...

US Pat. 6904529 - Filed Apr 28, 2000 - Microsoft Corporation

"Client Puzzles: A Cryptographic Countermeasure Against Connection ... "Analysis of

a Denial of Service Attack on TCP", Proceedings of the 1997 IEEE ...

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#### **Patents**

Patents 1 - 8 on computational task denial of service. (0.04 seconds)

Sort by relevance | Sort by date (new first) | Sort by date (old first) System and method for preventing a spoofed remote procedure call denial of ...

US Pat. 6775704 - Filed Dec 28, 2000 - Networks Associates Technology, Inc. In addition, one variety of flood attack, known as a distributed denial of service (DDOS) attack, utilizes network broadcast messages to amplify the impact ...

<u>Cryptographic countermeasures against connection depletion attacks</u>

US Pat. 7197639 - Filed Feb 2, 2000 - RSA Security Inc.

In one embodiment, a client 110 that is equipped with a 20 program capable of solving a computational task. Such a program can be built into a browser. ...

Method and system for distributed generation of unique random numbers for ...

US Pat. 6948074 - Filed Mar 9, 2000 - 3Com Corporation

Computational burdens placed on a network address translation router may be ...

Absolute protection against denial of service is virtually impossible, ...

# Generous tit-for-tat cooperative distributed computing

US Pat. 6061744 - Filed May 12, 1998 - Autodesk, Inc.

t.,,,,,, j scheduler then schedules the various independent task/...,,...

... involves a large number of computational intensive tasks/ and the grantor ...

# Method and system for controlling attacks on distributed network address ...

US Pat. 7028335 - Filed Aug 27, 1999 - 3Com Corporation

"Random Number Generators", Computational Science Education Project, 1991, 1992,

1993, ... and limiting the disruption caused by denial of service attacks. ...

# System and method for providing virtual network attached storage using ...

US Pat. 7139809 - Filed Nov 21, 2002 - ClearCube Technology, Inc.

To prevent denial-of-service attacks, a value in excess of a maximum value (eg.

9) may be reset to that maximum value. In 2409, a DCI "listener" in the core ...

#### Encryption key exchange protocol

US Pat. 6795555 - Filed Dec 30, 1999 - Nortel Networks Limited

... as one of the communicating parties and (iv) denial of service attacks, ...

However, there are high computational overheads associated with the ...

#### System and method of detecting events

US Pat. 7143442 - Filed Aug 2, 2001 - British Telecommunications

- ... of IP address behaviour, but at the expense of additional computational time.
- ... detecting "denial of service attacks", where multiple sources send ...

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#### **Patents**

Patents 1 - 10 on computational work denial of service. (0.05 seconds)

Method and apparatus for using client Sort by relevance | Sort by date (new first) | Sort by date (old first) puzzles to protect against denial-of ...

US Pat. 6944663 - Filed Mar 6, 2002 - Sun Microsystems, Inc.

A method for protecting a server against denial-of- service attacks, ... n varies the amount of computational work involved in computing the preimage x. 3. ...

#### Efficient certificate revocation

US Pat. 6487658 - Filed Dec 18, 1997 - Corestreet Security, Ltd.

- ... accused by users of denial of service. 15 At the most basic level (we shall
- ... Because CILs require a minimum of computational work (essentially one ...

### Method and apparatus for cryptographic protection from denial of service attacks

US Pat. 7139679 - Filed Jun 27, 2002 - Cisco Technology, Inc.

The decryption service 131 may be against denial of service attacks; implemented in

... 3A is a flowchart that illustrates a high level over- 60 work 155. ...

# Method and apparatus for detecting denial-of-service attacks using kernel ...

US Pat. 7043756 - Filed Sep 27, 2001 - McAfee, Inc.

Server 110 also includes an magnitude of 1079 indicating that server 110 was found to internal mechanism for detecting denial-of-service attacks. be ...

# Cryptographic countermeasures against connection depletion attacks

US Pat. 7197639 - Filed Feb 2, 2000 - RSA Security Inc.

- ... 110 that is equipped with a 20 program capable of solving a computational task.
- ... can mount a denial-of-service attack simply by corrupting packets. ...

# Secure aircraft communications addressing and reporting system (ACARS)

US Pat. 6677888 - Filed Aug 9, 2002 - Honeywell International, Inc.

ICAO has determined that denial of service, masquerade, and modification of information are the primary safety threats to ATM. See, eg. Adnams, Martin, ...

# Method for building classifier models for event classes via phased rule ...

US Pat. 6782377 - Filed Mar 30, 2001 - International Business Machines Corporation Current work in deviation detection may fail. ... incidents of attack would be rare as compared to the computer in a denial-of-service (dos) attack. ...

### Method and system for controlling attacks on distributed network address ...

US Pat. 7028335 - Filed Aug 27, 1999 - 3Com Corporation

"Random Number Generators", Computational Science Education Project, 1991, 1992, 1993, ... and limiting the disruption caused by denial of service attacks. ...

Method and apparatus for individualized postage value computing US Pat. 4504915 - Filed Jun 30, 1982 - Pitney Bowes Inc. Hence, the updating **service** for the user tends to be less frequent and less 15

... pseudo rate charts for individualized postal rate computational services. ...

## Generous tit-for-tat cooperative distributed computing

US Pat. 6061744 - Filed May 12, 1998 - Autodesk, Inc.

... "back end" portion 138 that operates to **service**/ application back ends, step 164. ... involves a large number of **computational** intensive tasks/ and the ...

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computational work denial of service

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